



# THE IMPACT OF METACOGNITIVE AWARENESS ON STUDENTS' ACHIEVEMENT IN PSYCHOLOGY

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## ABSTRACT

This paper investigated the impact of metacognitive awareness on achievement in psychology among first semester students of college by using causal comparative research method. A total of 150 students from one private college participated in the study. The quantitative data was gathered using achievement in psychology test and metacognitive awareness inventory. The data was analyzed by employing both descriptive and inferential statistics (t-test) in SPSS. The results indicated statistically significant differences between the high and low metacognitive awareness groups of students where students with high metacognitive awareness achieved better in psychology than students with low metacognitive awareness.

**KEYWORDS:** Metacognitive awareness, Students' achievement.

## 1. Introduction

Metacognition has often been a whispering word in psychology and education. It has always stimulated educational and psychological researchers to observe its significance for improving learning and thus achievement of students.

### However, what exactly metacognition is?

It is a process in which students utilize their higher level of thinking skill to control various processes of learning such as planning of a specific strategy to approach a particular learning task, then evaluating the level of understanding and progress made to learn that task (Livingston, 1997). Metacognition play very important role in productive learning. High and low metacognition of students may be a cause of the successful or unsuccessful learning. Each one of us has always wondered why some people learn and understand so quickly or others take enormous time to comprehend the same concept. The reason is not always the differences in intelligence quotient (IQ) of people, but how smart someone is in approaching or dealing with the task or how much awareness someone has about his own cognition? For instance, many students learn well while sitting in a library independently while few like dependent learning which means relying on others for understanding the concept. Therefore, the one who knows that he can approach a task by sitting in a library alone with the help of books or online content will be successful in understanding it and an outcome will be more fruitful. Hence, metacognition is knowing about your own knowledge or in simple words, self-awareness about how to deal with the task? How to learn it? Which strategies to use for making learning more successful? Thus people who possess an ability of knowing, reflecting and controlling one's own thought processes related to learning possess greater level of metacognition and they are more capable of achieving good results in academics. Moreover, many studies have reported that high level of metacognition indicates good academic performance of students (Young & Fry, 2008).

The term metacognition was proposed by Flavell to explain how people control their own thinking process. Schraw and Dennison (1994) stated metacognition as "the ability to reflect upon, understand, and control one's learning".

Livingston (1997) stated metacognition is a "thinking of higher order that constitutes dynamic self-control across the process of mind".

Concepcion (2004) explained metacognition as a "self-assessment and self-reflection for learning theorists".

Metacognition highlights two processes which are significant for a success in learning any task. These are self-control and self-evaluation. Likewise, Schraw and Dennison (1994) also proposed two facets of metacognition: knowledge of cognition and regulation of cognition. The higher level of two facets together enhances metacognitive awareness of students as they know how to approach a task and also to control their learning to make it more productive.

## 2. Objective of the Study

The following objective was stated to study the problem:

- To study the impact of metacognitive awareness on students' achievement in psychology.

## 3. Review of the related literature

The previous studies were reviewed in terms of the effect of metacognition on achievement of students.

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### 3.1 Metacognition and achievement of students

Ozsoy and Ataman (2009) found that students who were given training of metacognitive skill had higher achievement in mathematics problem solving than students who were not given any training associated with metacognitive skill.

Al-Khateeb (2011) observed that students who were taught by employing metacognitive learning model achieved better than those students who were not taught by using this model.

Fouche (2013) studied the effect of metacognition on achievement of students in physics and found significant differences between the groups favoring the group which was treated by employing metacognitive strategies.

Sawhney and Bansal (2015) reported significant differences between high and low metacognitive awareness group of undergraduate students on their academic achievement. Students with high metacognition achieved more than students with low metacognition.

Metacognition has significantly influenced achievement of students when they were given training in enhancing their metacognition, their achievement was better comparatively students who were not given any training or not taught by using any metacognitive learning model (Ozsoy & Ataman, 2009; Al-Khateeb, 2011; Fouche, 2013; Sawhney & Bansal, 2015)

This study has not treated students with any type of metacognitive training as students' metacognitive awareness was diagnosed with the help of questionnaire and as per their level of metacognition (high & low), students' achievement in psychology was determined to find out the significant differences of high and low metacognitive awareness group of students on their achievement.

## 4. Hypotheses

The following null hypothesis was tested:

- There is no significant difference in the scores on achievement in psychology among students with high metacognitive awareness and low metacognitive awareness.

## 5. Method and Procedure

The method and procedure of the paper has been studied under the following sub-headings:

### 5.1 Research Design

This research utilized ex-post facto method of research where causal comparative design was used. The ex-post facto is a method where independent variable (metacognitive awareness) has already occurred as this variable was not manipulated and students were not given any training to improve their metacognitive awareness. The effect of students' metacognitive awareness was examined on dependent variable (achievement in psychology) of the study. The independent variable: metacognitive awareness was studied at two levels such as high metacognitive awareness and low metacognitive awareness.

### 5.2 Sample

The sample of the study consisted of 150 students of BA first semester who were selected from one private college of Chandigarh. Students were volunteered to participate in the study for filling questionnaires. Thus, total number of 150 stu-

dents who were willing to participate administered two questionnaires such as achievement test in psychology and metacognitive awareness inventory.

### 5.3 Instruments

The following instruments were employed for gathering a data:

- Achievement test in psychology:** The achievement test in selected topics of psychology was prepared and reliability of the test was 0.84 which was determined by using Kuder Richardson (KR) 20 formula.
- Metacognitive Awareness Inventory:** The metacognitive awareness inventory (52-item) by Schraw and Dennison (1994) was employed after testing its reliability again on 40 sample of first semester students of two colleges of Chandigarh. The reliability of the test was 0.74, determined by employing Cronbach Alpha.

## 6. Discussion of Results

### 6.1 Descriptive statistics on achievement in psychology scores for high and low metacognitive awareness groups of students

**Table 1: Descriptive statistics of achievement in psychology scores**

High Metacognitive Awareness Group					Low Metacognitive Awareness Group				
N	Mean	SD	Sk	Ku	N	Mean	SD	Sk	Ku
41	20.80	5.22	-2.683	0.94	41	8.7	3.65	0.217	0.2

mean of high and low metacognitive awareness groups of students was not close and very different from each other. Besides, the values of skewness and kurtosis existed within the acceptable range of normal distribution. In addition, the mean (14.7), skewness (-.118) and kurtosis (-1.321) values of the total sample (n=82) was within the acceptable limits of normal distribution.

The levene's test of homogeneity showed equality of variances for both the groups (Levene's statistic: .068, p-value = 0.794 > .05 alpha level of significance).

### 6.2 Inferential statistics on achievement in psychology scores for high and low metacognitive awareness groups of students

**Table 2: Summary of t-test carried out on achievement in psychology scores for metacognitive awareness (low & high) groups of students**

Achievement in psychology scores	Independent Sample t-test		
	t	df	sig. (2-tailed)
	12.14	80	.00

Table 2 indicates statistically significant differences between high and low groups of metacognitive awareness students on achievement in psychology scores which rejects null hypothesis (there is no significant difference in the scores on achievement in psychology among students with high metacognitive awareness and low metacognitive awareness) as significant differences were observed between the two groups [ $t(80) = 12.14$ ,  $p = 0.00 < 0.05$  level of significance]. The means of two groups are significantly distinct from each other as students with high metacognitive awareness (mean= 20.80) achieved higher in psychology than students with low metacognitive awareness (mean=8.7).

## 7. Conclusion

The impact of metacognitive awareness on students' achievement found a statistically significant differences between the high and low metacognitive awareness groups as students with high metacognitive awareness achieved higher than students with low metacognitive awareness in psychology. The results of this paper were consistent with Sawhney and Bansal (2015) who reported that students with high metacognitive awareness achieve more than their counterparts. It is because students with high metacognition have better understanding of their own knowledge and they can control their thought processes which guide them which strategy to use for learning a particular task. In this way, students with high metacognition learn successfully and thus their achievement are better than students with low metacognition.

The results of this research shows that it is necessary to develop metacognitive awareness of students as it leads to higher achievement. Besides, the effect of metacognition indicates to focus on diagnosing metacognitive awareness of students before teaching them and providing metacognitive training to those students with low metacognitive awareness.

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